

**Time for Change:
Transforming Funding for Broadband Universal Service**

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January 2007

INTRODUCTION

This Working Paper is a part of a Project on universal service policy sponsored by the Benton Foundation in co-operation with the Institute for Information Policy at Penn State University. The Project has commissioned a series of papers on the topic of a new vision of universal service for the Information Age. This paper addresses the area of funding: both contributions into a fund in support of broadband universal service, as well as distributions from the fund in support of infrastructure in high-cost areas, access for low-income households, and the e-rate program (schools, libraries, rural health care).

This Paper addresses the emerging IP-based world and its implications; offers principles which should underlie any new approach to universal service; discusses legislation on universal service introduced but not passed in the last Congress; considers some new proposals for the coming Congress, and suggests some ideas for going forward.

In order to keep the focus sharp, some useful information has been relegated to Appendices. Appendices include: i) a list of assumptions of the Paper; ii) the relevant sections of the 1996 Telecommunications Act; iii) a discussion of the current funding distribution regime; and, iv) the full text of Title II, Universal Service Reform: Interconnection of S.2686, The Communications, Consumer's Choice and Broadband Deployment Act of 2006, passed in the Sen. Commerce Committee June 28, 2006 by a vote of 15-7, and incorporated into The Advanced Telecommunications and Opportunities Reform Act of 2006 (S.2686/HR 5252).

1. OVERVIEW: "EVERYTHING OVER IP" (EOIP)

To establish a realistic funding regime for universal service going forward, it is necessary to understand some of the broader trends in telecommunications and information technology, and the changes they are bringing to traditional models which form the basis of current universal service policy.

Communications networks (and associated applications and hardware) are all moving towards Internet Protocol (IP)-based systems at a rapid pace. This includes “transport” companies such as traditional telecommunications carriers, cable television system operators, mobile (fixed and wireless) carriers, satellite-based carriers, and several as-yet marginal technologies such as broadband over powerline and broadband over gas line. It also includes the applications they carry or provide, such as voice, video (including but not limited to traditional “television”), multi-media, and innumerable websites and data bases. This is the world former FCC Commissioner Abernathy characterized as “Everything Over IP” (EOIP).

In the world of EOIP it makes no sense, from a technical point of view, to speak of “telephone companies” and “cable companies” and “cell phone companies,” etc. They are all companies in the same transport business, i.e., delivering packets of bits. Like trucking, they may be distinguished by how fast they deliver the bits, how many are damaged, how many “fall off the truck,” how secure they are, and similar features. But they are all basically in a commodity bit-delivery business. The bits (or packets of bits) mean nothing individually. They may be transmitted by different routes, and “out of order”. The information they carry is in their collective pattern, so that they can be configured and reconstructed into the desired outcomes, such as voice, pictures, video, e-mail and so on. The packets are, in the typical case, all mixed together during transmission. Until recently, it has been either too difficult and/or too expensive for the networks to care about and identify the nature and contents of individual packets.

Consumers are being offered competing bundles of integrated services, combining undifferentiated packages of regulated, unregulated and protected components (the “triple” or “quadruple play”). These “bundles” offer various functionalities, but internally, they are simply packets of bits constructed into different applications by software instructions, delivered by a multiplicity of transport technologies.

In the world of EOIP, there are no “circuits” (classic telephony) or “channels” (cable and broadcast television), there is just a very rapid stream of packets of bits, which are then reconfigured into whatever content or application is dictated by the users. These users, or more accurately the computers they are using, are identified by unique Internet identifiers called IP addresses, which can be permanent or temporary. Users can connect from any point on the network, although the available applications may be limited by the speed and quality of the connection. The physical infrastructure of the Internet is complemented by an older, less efficient, system, called the public switched telephone network (PSTN). The PSTN is gradually being absorbed into the EOIP world by its conversion to IP-based capabilities. It uses an older, less efficient, system of making connections, left over from the analog, circuit switched world of classic telephony, called “telephone numbers”. Fortunately, technology and businesses currently exist to make it possible to interconnect these two systems, so that during a period of transition, IP addresses can contact PSTN numbers and vice-versa. The emergence of EOIP is having significant impacts on a variety of areas, such as regulation, marketing and corporate structures.

EOIP is challenging the FCC’s traditional regulatory categories, as more and more, traditional regulated services (e.g., telecommunications, broadcasting) are moving into the zone of currently unregulated “information services”. The two most prominent examples are Voice over IP (VOIP), which is the functional equivalent of telephony, and IP Television (IPTV), which is the functional equivalent of cable television. And, it should be added, video over IP, the rapid growth of audio and video program content (e.g., films, “TV” programs, and user-created content) which apparently falls outside of traditional categories. This places a heavy burden on traditional FCC common carrier regulation of “telephony” and thus directly impacts universal service (see Frieden paper).

The overall structural resolution of these regulatory issues is not unrelated to the universal service discussion, in the event that the FCC moves to a type of “layered” model of regulation to replace the failing “silo” model of regulation, or just declares everything IP-based to be a minimally regulated “information service”, the current basis

for the collection of universal service revenues will have to be revisited. “Voice” will no longer be a separate meaningful category of service.

In the EOIP world, “voice” capability is being integrated into many applications, and will not manifest merely as VoIP. It will be part of messaging (IM), games, tele/videoconferencing, “push to talk,” and likely will be a basic feature of next generation operating systems¹. It will be available in many ways at no separate charge. It may be ad supported, or free, or bundled. As a narrowband application, it can be part of almost any other application at little incremental cost. These streams of data will pass through all kinds of carriers, some wired, some wireless, some charging a fee, some ad supported, some wholly or partly free (including municipal systems) or even consumer-based mesh networks based on WiFi or other technologies.

In the EOIP world, there will not be a separate voice network, or separate voice service. It is possible that anyone with a connection to the Internet will be able to establish a voice connection with anyone else on the network without going through any kind of metered or priced service. There will be no measured “minutes of use” or similar metrics. “Voice” will be part of a bundle of services, or of an application. In the EOIP world, trying to segregate “voice” or “telephony” or “telephone numbers” or use of the PSTN as the basis for assessing universal service revenues will make no sense. Expressions such as “PSTN” and “telephone call” will increasingly have no useful meaning.

Charging consumers based on criteria such as time of call, time of day, distance of call, local vs. long-distance, etc. is giving way to charging for components in a hierarchy of functionalities and content. As traditional charging criteria lose relevance, they are replaced by components such as: access (connection) to the network; network compatible software and hardware; Internet connectivity (which may include a local transport component, a local ISP component; and connection to the backbone network); bit rate (speed of connection); quality of service; available applications based on levels in a

¹ See: http://www.cio.com/blog_view.html?CID=26481

protocol stack (e.g., encryption); simple (e.g., e-mail) and complex programs (translation), and access to content, both free and for a charge.

Because the transport of bits is becoming a commodity business, the higher margin products are in value-added and content services. Thus, it is in the interest of the transport companies to extend themselves into those markets. Further, since all they are delivering as transport companies are packets of bits, even though they can differentiate their services for marketing purposes, they need to sell them as bundles. In a sense, they don't need to care which services their customers buy, as long as they buy enough of them bundled together to reach a critical amount of spending per household per month.

The economies of scale and scope and the global nature of these new networks have led to the horizontal, vertical and global integration of the enterprises engaged in the production, packaging, marketing, distribution and transport of bit streams representing both telecommunications services (e.g., voice service, wireless, cable TV, Internet access) and the content of these services.

What are some of the implications of this move to EOIP for assessing universal service fees? Assuming current clear trends continue:

- There will be no distinction between local and long distance
- There will be no distinction between interstate and intrastate
- There will be no distinction between wireline and mobile
- There will be no “basic package of services” around value added voice services (i.e., the current minimum standard “universal service” package)
- There will be no meaningful class of “voice” service. There will only be a bit stream.
- There will be no stand-alone PSTN. There will be a ubiquitous IP based network of which the traditional PSTN is a component.
- Technology will make the network accessible anywhere by some technical means – the only barrier will be price.

- There will be no meaningful “telephone numbers” in the current sense; there will still be numbers that look like telephone numbers, but will not be attached to a particular telephone or geographic location.
- There will be multiple carriers delivering the same service, packets of bits, configured in similar ways.
- All traditional regulatory jurisdictional boundaries will become permeable.
- Customers can have their bits configured as they please, or can configure them themselves.
- “Voice” in many cases will be essentially free and/or ad supported and/or provided by non-profit or municipal entities.
- “Voice” in many cases will not be a separate service for purposes of billing or measurement of traffic
- Regulation of the network will be federalized, with a corresponding loss of state-level control. This may happen quickly if the FCC declares all IP-enabled services to be interstate.

At present, the universal service fund for high cost/low income support is collected from mandatory contributions interstate telecommunications carriers and for the e-rate from all telecommunications carriers providing service within a state. This does not include, for example, intrastate carriers, mobile telecommunications companies (in some circumstances), cable modem services, ISPs, or content services. However, for the era of EOIP, a more reasonable approach to deciding who contributes would be to ask the question, “who benefits?” The answer is layered and nuanced. Transport companies are still the first line of contributions. A more rational proposition would be that companies that profit significantly from the use of the Internet are at least as equitable candidates for contributions as the underlying transport companies.

A value-chain analysis of the EOIP world suggests the following rough hierarchy of candidates for fair contributions to a restructured universal service fund:

[I am consciously avoiding referring to this as “layered” so as not to get caught up in the “layered regulation” debate, but there seems to be a rough parallel – rt)

- Infrastructure facilities owners (may be different than carriers)
- Facilities-based transport (carriers and others eligible for USF distributions), CLECs and users of unbundled services
- Virtual network operators (which may own no facilities, but simply “brand” facilities operated for them by others)
- Network access providers (ISPs, IAPs)
- Self-identified “carrier” companies, including virtual carriers “holding out to the public”, e.g. Virtual Mobile Network Operators) whether or not facilities-based
- Direct Enabling Technologies (software and hardware)
- All IP-enabled services
- Sellers of products and services over the Internet
- Applications offered through the network
- Content providers for a fee
- Indirect enabling technologies

All transport companies should be included, whether wired or wireless, intrastate or interstate, including any entities providing connectivity to the Internet (ISPs, which are increasingly affiliated with carriers). (It would be unfair, irrational and distinctly not competitively neutral to single out only wireline, facilities-based carriers.) Since universal service funds are a contribution, not a tax, they would not conflict with the laws against new taxes on the Internet and connectivity. But to integrate them into a universal service regime will necessarily impose some costs on the Internet². The Internet has been a powerful engine of economic growth, and there is a strong sense that it should not be disturbed. However, if costs are spread widely enough, the incremental burden on Internet users will be nominal. This approach would be fairer and competitively neutral, and since all those who benefit also contribute, the contribution of any one entity will be relatively lower.

² See: http://news.com.com/Senators+aim+to+ease+up+on+Net,+phone+taxes/2100-1028_3-6147393.html?tag=html.alert

As long as ISPs are in the value/payment chain for an end-user's access to the Internet, add costs to the network, and potentially benefit from universal service funds, they should contribute. A distinction should be made between the ISPs role as a content provider and as an access service provider. Further, companies which profit from the investment in Internet infrastructure by providing content or services, and receive income from sales, fees or advertising might also have a USF obligation reasonably attributed to them. If the carriers have their way, and are able to surcharge companies like Google, Amazon, etc., to recapture some of the value of their investment, these revenues should be subject to USF contribution as part of the transport companies' revenues. Or, if the forces of network neutrality prevail, as seems increasingly likely, alternative ways of assessing contributions might be sought. There remains an equitable question of whether those who profit the most from the information infrastructure (the on-line service providers) should be forever sheltered from contributing to its support, while the end users and the companies making the investment bear the entire burden. Some have questioned whether this is equivalent to a form of regressive taxation³.

2. SOME RESIDUAL COMPLICATIONS

a. Residential Underpricing

One of the persistent problems for high-cost universal service support is that a large percentage of residential customers (in some areas, perhaps as much as 80%) have been receiving basic telephone service below cost, from local incumbent monopolies that have been receiving universal service cross-subsidies to high-cost service areas. To make these customers attractive to potential local competitors, either their rates have to rise to cost or above, or the competitors must get equally large subsidies. If the remaining customers in these areas have to bear the burden of these subsidies, their rates will have to be far above cost, making them attractive to "cherry picking" competitors.

³ See: <http://www.broadcastingcable.com/article/CA6397438.html?display=Breaking+News/>, <http://www.mercurynews.com/mld/mercurynews/news/opinion/16106404.htm>

One possible solution is to increase the “take out per home”, that is, the total monthly bill, to a profitable level by selling additional non-basic services, and, eventually, a bundle of services of which “voice” is only a part. But do we want companies that will only sell expensive bundles of services and not offer an inexpensive basic service equivalent to today’s residential telephone service?

b. Historic Costs

There does not appear to be any easy solution to the question of historic costs (funds already invested by the traditional carriers in now-outmoded infrastructure) that is totally satisfactory and politically and regulatorily acceptable. Fully recognizing such costs could impair the federal policy of competition and result in higher rates. Ignoring such costs is seen by some as a “taking” of the assets of the incumbents investors. Thus, it will apparently be left to the courts to resolve. Another approach would be to build these costs into universal service costs (that are passed on directly to consumers) as part of the “universal service” line item. However, they would be paid out only to incumbents, not to competitors (who do not have any “stranded” costs). This would be mechanically workable, but would distort the universal service payments process. A variation of that which has been suggested would be to use a mechanism similar to the universal service mechanism, but have a separate surcharge on customer bills. Or, it might be possible to make such a charge “virtual” (i.e., non-explicit to consumers) by creating a structure of internal transactions between carriers, e.g., Noam’s “Net Trans” proposal⁴.

In a pure market model of telecommunications services, every user would pay exactly the cost of providing the service, plus a little profit. In a pure equality model, every user would pay exactly the same amount, no matter what the cost of the service. Congress has decreed that there shall be both competition and universal service. The traditional model is more like the equality model. The new model is more like the competitive model. In the competitive model, prices to customers should realistically reflect the cost of providing them service. Congress needs to keep this balancing in mind as it reenvision

⁴ See: <http://www.vii.org/papers/nettrans.htm>

universal service as a broadband service, so as to allow the market to work, and providing subsidies only when there is an established market failure (advancing social policy with the e-rate may be an exception to this).

c. Portability

Federal universal service support should be portable among all eligible telecommunications carriers, like telephone numbers. When a competitor acquires a subscriber line from an incumbent receiving support, the competitor should receive the incumbent's support. Implementation of this concept becomes somewhat more complex if the idea of “subscriber line” is redefined to be a broadband connection, which can be provided by any one of a number of sources.

d. Entities Eligible for Support

Universal service funding support for rural areas has traditionally been paid to telephone companies, not telecommunications users, based on their costs for serving high-cost customers. To promote competition for these funds, the FCC has ruled that any telecommunications carrier, regardless of the technology it uses, is eligible to receive universal service support. However, as recommended by the Joint Board, a telecommunications carrier must meet three criteria to be eligible:

- It must offer each of the designated services in the defined basic service package
- It must offer the services using their own facilities, or a combination of their own facilities and the resale of services provided by another carrier, and
- It must advertise the availability of and charges for the services. The states designate carriers eligible to receive support in part by establishing guidelines for carriers in regards to advertising.

The definition of “eligible telecommunications carrier” needs to be revisited based on the foregoing description of the realities of EOIP. Under almost any new definition, it needs

to be expanded. There should be some reasonable parallelism between those who are required to contribute and those who can apply for distributions from the USF.

There is another aspect of universal service support for incumbents that is worth noting. Incumbent local exchange companies are in many cases burdened with equipment that is outdated and inefficient relative to what could be used if one were starting fresh. Universal service funding to keep prices below costs sustains the use of outdated equipment against more efficient competitors which would likely prevail (at least on price) were the market cost-based. Using universal service to “level the playing field” between incumbents and competitors actually may have the perverse effect of discouraging both competition and innovation. Innovations are unlikely to attract investment if they must compete with established and subsidized “status quo” technology. It is true that abandonment of support for high-cost areas (as opposed to support for just one line) might raise the costs of local phone service substantially in some areas. But a whole new industry aimed at supplying rural communications service is emerging to attack the high costs underlying such price increases. Although non-wireline solutions to the rural telecommunications problem will probably predominate, innovative wireline solutions also hold promise.

The same factors that hold incumbent carriers back from upgrading their systems also serve as a deterrent to would-be competitors. Most competitive attention is focused on urban and suburban markets, where the economies of scale are better and there is guaranteed demand for advanced services. Uncertainties about universal service funding also make the more remote areas less desirable to competitors. While universal service in theory is competitively-neutral, state commissions have been not always been quick to designate competitive carriers eligible for universal service support.

3. PRINCIPLES UNDERLYING UNIVERSAL SERVICE

Sec. 254 (b) of the 1996 Telecommunications Act sets forth the following universal service principles:

- Quality services should be available at just, reasonable and affordable rates
- Access to advanced telecommunications and information services should be provided in all regions of the Nation
- Consumers in all regions of the Nation, including low-income consumers and those in rural, insular, and high cost areas, should have access to telecommunications and information services, including interexchange services and advanced telecommunications and information services, that are reasonably comparable to those services provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas.
- All providers of telecommunications services should make an equitable and nondiscriminatory contribution to the preservation and advancement of universal service.
- There should be specific, predictable and sufficient Federal and State mechanisms to preserve and advance universal service.
- Elementary and secondary schools and classrooms, health care providers, and libraries should have access to advanced telecommunications services

The Conference Committee Report further elaborated, “To the extent possible, the conferees intend that any support mechanisms continued or created under new section 254 should be explicit, rather than implicit as many support mechanisms are today”. In addition to the principles above, the FCC adopted the additional principle of "competitive neutrality": "universal service support mechanisms and rules should be competitively neutral. In this context, competitive neutrality means that universal service support mechanisms and rules neither unfairly advantage or disadvantage one provider over another, and neither unfairly favor or disfavor one technology over another."

This, then, is the framework within which the FCC operates in designing its universal service program. These universal service principles are expected to be implemented in

the context of developing a competitive marketplace. Indeed, section 254 is a subsection of Part II of the Act, entitled “Development of Competitive Markets”.

To promote competition for these funds, the FCC ruled that any telecommunications carrier, regardless of the technology it uses, is eligible to receive universal service support. However, as recommended by the Joint Board, a telecommunications carrier must meet three criteria to be eligible:

- It must offer each of the designated services in the basic package
- It must offer the services using their own facilities, or a combination of their own facilities and the resale of services provided by another carrier, and
- It must advertise the availability of and charges for the services. The states designate carriers eligible to receive support in part by establishing guidelines for carriers in regards to advertising.

The following are some general principles for reference as the advanced universal service regime evolves. A successful advanced universal service program should:

Promote Competition

- Eliminate unnecessary or counterproductive regulations
- Actively promote competition
- Let the market function to the maximum extent possible
- Create incentives for efficiencies
- Avoid distorting effective price competition
- Inform potential users of availability and benefits
- Prefer subsidies and incentives to price controls
- Focus on network capabilities (functionalities) rather than specific technologies
- Attach costs properly to services
- See that those who create costs are the ones to bear them
- Costs process must be transparent/fair (all see costs and allocations)
- Avoid paying more than the true market price for subsidized services

- Encourage technological innovation
- Not subsidize inefficient, outmoded or non-competitive technologies

Be Narrowly Tailored

- Target narrowly high cost and low-income subsidies
- Do not subsidize technologies/services for which there is no demand
- Make the subsidy as small as necessary to accomplish the goal

Be Neutral

- Competitive neutrality
- Structural neutrality (not favor integrated or unbundled services)
- Technological neutrality
- Applications and content neutrality
- Geographic neutrality (not disproportionately burden any part of the country)
- Transitional neutrality (no negative shocks or windfalls due to transition)
- Jurisdictional neutrality (should integrate into the federal-state regulatory system)
- Neutrality as between purchase of services over end-user equipment

Be Politically Attractive

- No one involuntarily loses current telephone service. Those who wish to do so may keep it indefinitely. No one is forced to get a computer.
- Build on existing programs
- Recognize geographical differences (population density and income)
- Maintain appropriate jurisdictional roles
- Create a role for non-profits, community groups, co-ops, demand aggregators, public-private partnerships.
- Be flexible during transition

4. UNIVERSAL SERVICE LEGISLATION INTRODUCED IN 109TH AND 110TH CONGRESS

On June 13, 2006, the Senate Commerce Committee passed by a vote of 15-7 the Communications, Consumer's Choice, and Broadband Act, subsequently incorporated in the Advanced Telecommunications and Opportunities Reform Act of 2006 (S. 2686/HR 5252).

This Bill, which died when the 109th Congress adjourned, was a serious attempt to address the new state of affairs brought about by the transition to EOIP. Without precisely stating it, it has the effect of making the provision of "broadband" (as defined in the Bill and subject to future updating) the new goal of universal service. In the process of doing so, it substantially revises the definitions of which entities should contribute to the USF, how the contributions may be assessed, and how the funds should be distributed.

It addressed only those aspects of universal service related to the support of rural and high-cost areas. It did not address issues of targeted support to low-income users. The full text of Title II of the Bill, "Universal Service Reform: Interconnection" is provided as an Exhibit. In sum, it provided that:

Contributions

Expands base of contributions to USF:

- Communications service providers (includes telecommunications service, broadband service or IP-enabled voice service providers)
- Broadband service provider (includes any service, regardless of the transmission medium or technology employed that connects to the public

Internet for a fee: i) to the public, or ii) to such classes of users as to be effectively available directly to the public.)

- IP-enabled voice service providers

Contributions to be assessed on:

- Intrastate, interstate or international revenue
- Working phone numbers
- Network capacity including broadband connections

For purposes of contributions, defines broadband service as “a transmission speed of at least 200 kilobits per second in at least one direction.”

Distributions

- Requires all carriers receiving USF support to offer broadband service (here defined as at least 3 megabits per second in at least 1 direction, regardless of the technology used) within five years of enactment of the Act
- Creates a new broadband deployment fund within the USF that would make available up to \$500 million per year to provide broadband service (here defined as 100 kilobits per second in at least one direction) to unserved areas.

The proposed Bill appeared to allow for any kind of carrier to be eligible for USF funding. However, only one facilities-based provider of broadband service may be supported in any single unserved area. All residential and business lines, and not just a single connection or primary line, are eligible for support.

This represents a large conceptual step in the direction of remodeling universal service for the era of EOIP. It expands the scope of contributors greatly. It includes traditional

telecommunications carriers and VOIP providers to the extent that they offer real-time 2-way voice communications to the public which can originate traffic to, or terminate traffic from, the PSTN. It apparently does not cover VOIP services which do not use the PSTN. Over time, this will increasingly limit its reach. However, this may not matter, as it is increasingly useless to predicate USF payments on “voice” service.

It captures “communications service providers,” but what that includes is not entirely clear, as the definition of “communications service providers” includes “telecommunications service”, which is traditionally regulated common carrier service; “broadband service”, which is any 3 Mbps service that connects the public to the Internet for a fee directly “. . . to the public”; and VOIP providers. Questions remain unanswered as to its scope.

At first reading, it does not appear to include ISP’s, although the language is arguably ambiguous. It would be useful if it were clarified. In addition, it does not appear to deal with situations where services are offered by municipal or non-profit organizations, or on a “free” or ad-supported basis (e.g., the Google wireless San Francisco proposal. What revenues will be the basis for the USF contribution when there are no identifiable voice revenues? What if “voice” is bundled? Would it be the revenues from the entire bundle, of which voice may represent only a miniscule percentage? What if it is part of the computer operating system?

The apparent underlying logic is one that is narrowly targeted to carriers and connections, and those “holding out” to the public as voice carriers. For the reasons discussed above, this is a somewhat parsimonious view, reflecting a simple extension of the USF “old regime” without trying to recreate it with a view to current and future technical and economic realities. The hierarchy of value/benefit presented earlier in this paper suggests there may be a more equitable and rationale approach.

As the first session of the 110th Congress has convened, Sen. Ted Stevens (AK) on January 4, 2007, introduced the Universal Service for Americans Act (S.101). The Bill

was referred to the Committee on Commerce, Science and Transportation. As of this writing, the full text of the Bill was not available⁵. However, a summary of the Bill is available as a .pdf file at

http://commerce.senate.gov/public/_files/USFforallsecbysec.pdf/. According to the summary, providers of telecommunications, broadband, and IP-enabled voice services would all contribute to the universal service fund. Definitions of those terms are not available in the summary. The Bill would establish a “Broadband Account” within the Universal Service Fund, limited to \$500 million per year, for which all providers of broadband services may be eligible. Further analysis of this Bill through the perspective of the move towards EOIP will become possible when the full text is available.

5. SOME FINAL THOUGHTS

The private sector is gradually making access to advanced (broadband) services widely available. However, there will be a transition period of years before it is as ubiquitous as telephone service. It is too early to tell to what extent market forces will drive penetration of such services. Past experience suggests that the normal workings of the market are not likely to fully provide the desired Congressional policy outcome of providing access to all at an affordable price. The current universal service funding arrangement will be inadequate to meet future needs as technology evolves and “advanced services” becomes the norm.

The base of contributors to the universal service pool must be expanded to all those in the chain of access and value. There should be symmetry between contributions to, and access to, the pool of universal service revenues. Internet carriers, ISPs, cable, telecommunications and “broadband” companies, and wireless and satellite companies that provide similar functionalities should be treated equally. To the extent equipment or software manufacturers are subsidized, they should contribute.

⁵ See: <http://thomas.loc.gov/cgi-bin/bdquery/D?d110:7:./temp/~bdQN6w:@@P/bss/d110query.html>

The individual components of the current USF distribution system are discussed at some length in Appendix III. The reader is referred there for details. Some general thoughts follow.

Subsidies for high cost areas (infrastructure) should be maintained, but targeted as precisely as possible. As a general principle, to the extent technically feasible, preference should be given to targeted support rather than general infrastructure support, to avoid unnecessarily subsidizing high-income rural households. As technologies become available to address this, they should be adopted.

The scope of subsidies for individuals or households (means tested) must be expanded to incorporate all functionalities and devices necessary to access advanced services and provide maximum choice of services. A fair balance should be sought between state and federal contributions. The role of states in targeting low-income users should continue. The net balance of transfer payments (costs to consumers) between low-cost and high-cost areas between and within states should be made transparent.

Support for schools, libraries and rural health care, which already provides for advanced services, should be continued, with an emphasis on serving the most needy first.

Consideration should be given to expanding the e-rate to include urban health care, as well as to ancillary services such as training. Further discussion of including non-profit and “public interest” groups would be useful. Including non-profit and community groups engaged in bringing advanced services to unserved or underserved constituencies would further serve the goals of Congress. Efforts should be made to integrate universal service funding with governmental and private initiatives to maximize efficiencies.

Although the federal definition of services eligible for support currently is drawn rather narrowly, some foresee a day when some services that currently aren't eligible for universal service support will be recognized as essential. Some have argued that the benefits of universal service should be broadened to include educational and developmental nonprofit organizations. Others have gone farther, arguing that the

definition of universal service should be expanded to include at least three new components: access to a computer with a World Wide Web browser, a personal Internet email address, and the capability to make one's own information available via the Web.

As Congress and the FCC look ahead, they have a choice. They can take a short-term view and base universal service funding on an extended version of voice services connecting to the PSTN. If they do so, this structure will become increasingly irrelevant, and will have to be revisited in a few years. Or they can take a realistic longer view, based on easily observable trends and the nature of the underlying technology, and recognize we are headed into the world of EOIP, and design a broadband universal service support policy which reflects those realities.

APPENDIX I:

UNIVERSAL SERVICE ASSUMPTIONS UNDERLYING THIS PAPER

General

Goal is to maximize penetration
Competition drives penetration
Competition is better than regulation (absent a “natural monopoly”)
New telecommunications services are not a “natural monopoly”
Incentives are better than penalties
If regulation is necessary, it should be the minimum of regulation
Existing regulatory barriers should be removed

Regulatory

Some FCC restructuring along functional lines will occur to adapt to technology changes
Current regulatory boundaries and models will significantly change
Regulation will be increasingly federalized, but some state-federal jurisdictional division will persist
Issues of interconnection, access pricing, and residual value will be legally resolved

Technology

Over the next decade, some version of “advanced services” will become the norm - accessible everywhere in U.S., by some means, at some price
Digital technologies being fungible, an emphasis on functionalities will replace focus on delivery mechanisms (wire, wireless, satellite, etc.)
Entire telecommunications infrastructure will move to an Internet-type structural model, delivering all traditional electronic media via packet-switching

Business

Information-based global enterprises will continue to grow, and become integrated both horizontally and vertically, competing across a wide range of services and geographic areas

Many different companies will participate in many different ways in delivering information services and products

Universal Service

Universal service is a moving target - evolving vision

Move from “universal voice service” to “digital divide advanced service”

Need to migrate universal service to advanced services

The content of the universal service “basket” will expand

Economics of universal service should be rationalized

Costs should be identified and attributed appropriately

At the margin, there will still be those unserved or underserved

Low penetration will not be randomly distributed

The focus is the household

A mix of infrastructure support (to companies) and means-testing (for individuals/households) will continue

Political

Universal service will not be abolished

Congressional policy will maintain high cost/low income support

E-rate will likely continue with some “fine tuning” and redefining possible

Internal tensions in policy will continue (promoting both competition and subsidies), resulting in some unavoidable anomalies

Congress will not want to use general tax funds to support universal service

'96 Telecommunications Act needs to be revisited to address unavoidable changes and FCC jurisdictional scope

Economic

Should be paid for in “fairest” way

Subsidies should be explicit

All beneficiaries should contribute (expansion of current pool)

Contributions should be equitably distributed (expansion of current pool)

Many neutralities (e.g., technology, industry, etc.)

Support should be based on functionalities delivered, not distribution method

Consumers

Way people buy and use services will change

Digital services will be packaged and sold as “bundles”

Various package elements can be purchased separately or together, from various providers

Public will accept universal service surcharges

New forms of technology / financing will emerge

Other

Other models, in addition to subsidies, will emerge to enhance broadband penetration.

APPENDIX II:

RELEVANT SECTIONS OF THE 1996 TELECOMMUNICATIONS ACT

Section 706 of the Act provides that:

The Commission and each State commission with regulatory jurisdiction over telecommunications services shall encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans (including, in particular, elementary and secondary schools and classrooms) by utilizing, in a manner consistent with the public interest, convenience, and necessity, price cap regulation, regulatory forbearance, measures that promote competition in the local telecommunications market, or other regulating methods that remove barriers to infrastructure investment.

The Commission is instructed to “accelerate deployment of such capability by removing barriers to infrastructure investment and by promoting competition in the telecommunications market”. The Act then offers a definition:

Advanced Telecommunications Capability. -- The term “advanced telecommunications capability” is defined, without regard to any transmission media or technology, as high-speed switched, broadband telecommunications capability that enables users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology.

It is significant that this definition is technology neutral and described in terms of functionalities rather than specific types of technology. The FCC has further defined broadband as "having the capability of supporting, in both the provider-to-consumer

(downstream) and the consumer-to-provider (upstream) directions, a speed (in technical terms, 'bandwidth') in excess of 200 kilobits per second (kbps) in the last mile."

The construction of broadband advanced services infrastructure in urban and affluent areas appears to be moving quickly based on market responses to demand, and does not appear to need any special support. The primary concerns are high-cost areas. The extent to which the market is responding to demand in those areas -- which is reportedly as high as it is in urban areas -- is a matter of debate.

Sec. 254 (b) of the Act sets forth the following universal service principles:

Quality and Rates. -- Quality services should be available at just, reasonable and affordable rates.

Access to Advanced Services. -- Access to advanced telecommunications and information services should be provided in all regions of the Nation.

Access in Rural and High Cost Areas. -- Consumers in all regions of the Nation, including low-income consumers and those in rural, insular, and high cost areas, should have access to telecommunications and information services, including interexchange services and advanced telecommunications and information services, that are reasonably comparable to those services provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas.

Equitable and Nondiscriminatory Contributions. -- All providers of telecommunications services should make an equitable and nondiscriminatory contribution to the preservation and advancement of universal service.

Specific and Predictable Support Mechanisms. -- There should be specific, predictable and sufficient Federal and State mechanisms to preserve and advance universal service.

Access to Advanced Telecommunications Services for Schools, Health Care, and Libraries. -- Elementary and secondary schools and classrooms, health care providers, and libraries should have access to advanced telecommunications services as described I subsection (h).

Additional Principles. -- Such other principles as the Joint Board and the Commission determine are necessary and appropriate for the protection of the public interest, convenience, and necessity and are consistent with this Act.

Section 254 (h)(B) provides that educational providers and libraries shall be assured “affordable access to and use of such services”.

The Conference Committee Report further elaborated, “To the extent possible, the conferees intend that any support mechanisms continued or created under new section 254 should be explicit, rather than implicit as many support mechanisms are today. In addition to the principles above, the FCC adopted the additional principle of competitive neutrality: “universal service support mechanisms and rules should be competitively neutral. In this context, competitive neutrality means that universal service support mechanisms and rules neither unfairly advantage or disadvantage one provider over another, and neither unfairly favor or disfavor one technology over another.” This, then, is the framework within which the FCC operates in designing its universal service program. These universal service principles are expected to be implemented in the context of developing a competitive marketplace. Indeed, section 254 is a subsection of Part II of the Act, entitled “Development of Competitive Markets”.

DEFINITION OF UNIVERSAL SERVICE: AN EVOLVING LEVEL OF SERVICE

Section 254 (d) of the Act defines “Universal Service” as:

In General. -- Universal Service is an evolving level of telecommunications services that the Commission shall establish periodically under this section, taking into account

advances in telecommunications and information technologies and services. The Joint Board in recommending, and the Commission in establishing, the definition of services that are supported by Federal universal service support mechanisms shall consider the extent to which such telecommunications services --

are essential to education, public health, or public safety;
have, through the operation of market choices by customers, been subscribed to by a substantial majority of residential customers;
are being deployed in public telecommunications networks by telecommunications carriers; and

Advanced Services

According to another report, "Breaking the Backbone," released by the Economic Strategy Institute, rural America is in danger of being left behind as the rest of the country forges ahead into the digital future. Residents of twelve states - the "Disconnected Dozen" - are particularly at risk of being deprived of the broadband services that are becoming widely available to urban and suburban dwellers, such as DSL and cable modems. These twelve states are said to have significantly fewer hubs than other states on a per-capita basis and to be at serious risk of falling behind in the digital economy. The States identified as at highest risk of falling by the digital wayside are: Alabama; Arkansas; Idaho; Iowa; Maine; Montana; New Hampshire; North Dakota; Oklahoma; South Dakota; West Virginia; and Wyoming.

In addition to whatever support might be offered by future universal service mechanisms, there are additional resources that are being brought to bear to provide access to advanced services to all areas.

APPENDIX III:

UNIVERSAL SERVICE SUPPORT DISTRIBUTION MECHANISMS

(Dated - Figures Need to Be Updated)

High-Cost Support: Infrastructure and Companies, Not Households

The economic reality is that some areas (and states) cost more to serve than others. In these cases, the economic desire to rationalize markets is overcome by the political GOAL of serving rural as well as urban areas, and low population states as well as high-density states. It is also supported by public policy arguments in favor of serving all comparably, if not identically. So it is appropriate to understand the universal service high-cost support program as a series of political balances, as well as a public policy to subsidize poor rural dwellers. The high-cost support program is an infrastructure support program designed to bring service to certain areas, whether those who dwell in them are rich, poor, or in between. Thus, it inevitably will have -- to take a worst-case example -- the urban poor paying more to underwrite the rich rancher or ski chalet. However, as technology evolves, policy makers may have more tools to better target support, and should use them.

High cost support can be sought by companies providing basic "core" telephone service to customers in areas of the country that are relatively more costly to serve. The \$1.7 billion in annual high cost support is raised by charges on long-distance providers, business phone lines, and second lines into residences. High-cost support goes both to companies that are defined as "rural companies" (those with a total of 100,000 access lines or less) and "non-rural companies" (companies with more than 100,000 access lines). The former includes numerous small, rural independent companies, the latter large companies such as Verizon, Bell South, etc. The high cost support provides subsidies for small, rural telephone companies that incur the highest costs for servicing lightly populated areas. These high-cost rural carriers currently receive about 87% of

current high-cost funding. The plan helps support 31.4 million of the approximately 170 million total U.S. access lines, according to the Universal Service Administrative Co.

Forward-looking cost approximates the costs that a hypothetical efficient carrier would incur in constructing and operating its network; those costs, minus a "revenue benchmark" taking account of all of a carrier's revenues, are used to determine the subsidy amount. This approach has been challenged in court. Another issue is that the "study area" used as the basis for developing costs is the entire coverage of the company within the state, which can be quite large -- even the entire state -- and includes both high cost and non-high-cost areas. States do have the option of using a smaller unit of measurement for apportioning funds.

There is another aspect of universal service support for incumbents that is worth noting. Incumbent local exchange companies are in many cases operating with equipment that is outdated and inefficient relative to what could be used if one were starting fresh. Universal service funding to keep prices below costs sustains the use of outdated equipment against more efficient competitors which would likely prevail (at least on price) were the market cost-based. Using universal service to "level the playing field" between incumbents and competitors actually may have the perverse effect of discouraging both competition and innovation. Innovations are unlikely to attract investment if they must compete with established and subsidized "status quo" technology. It is true that abandonment of support for high-cost areas (as opposed to support for just one line) might raise the costs of local phone service substantially in some areas. But some argue that a whole new industry aimed at supplying rural communications service is emerging to attack the high costs underlying such price increases. Although non-wired solutions to the rural telecommunications offer many opportunities, innovative wired solutions also hold promise.

Low Income Support: Means Testing for Households

In addition to the program for support of high cost areas, Congress also provided for support for low-income consumers. The high-cost support is not individually “means tested”, whereas qualification for the low-income support programs does involve means testing. The Act strengthened two programs designed to keep basic telephone service affordable for low-income families: Lifeline, which reduces monthly charges, and Link-Up America, which reduces initial connection charges.

The '96 Act, for the first time, introduced the term "affordable" into national telecommunications policy: it provides that quality services should be available at “just, reasonable, and affordable rates”. Congress then left it to the Joint Board and the FCC to determine what an “affordable” rate is. In defining affordability, the Joint Board concluded--and the FCC agreed--that:

the definition of affordable contains both an absolute component ("to have enough or the means for") and a relative component ("to bear the cost of without serious detriment"). Defining affordability as relative provides the flexibility to ensure that future iterations of universal service have available a permanent mechanism for adjustment to changing conditions. The FCC concluded that the states are the "appropriate fora" for measuring affordability.

The Act also says charges should be "reasonable.” Does "reasonable" mean below market? Not necessarily. The Supreme Court, in interpreting the Sherman Act's prohibition against price fixing, has indicated that the only “reasonable” price may be a competitive price.

All Eligible Telecommunications Carriers must offer the benefit of the low-income programs to their subscribers in order to receive federal universal service support. At present, Lifeline and Link-up discounts for low income residents apply only to home phone service and not to new telecommunications services such as the Internet.

a. The Lifeline Support Program: Supports Rates

The new rules make the contribution and distribution of low-income support competitively and technologically neutral by requiring all providers of interstate telecommunications services to contribute, and allowing all Eligible Telecommunications Carriers, including wireless carriers, to receive support for offering Lifeline and Link Up service.

Each Lifeline consumer receives \$5.25 per month in federal support. \$3.50 of that total will be automatic; an additional \$1.75 in Federal support will be available with state consent, but without any need for state matching funds. The federal fund will also provide \$1.00 of additional support for every \$2.00 of support provided by the states, up to a maximum of \$1.75, so that the maximum federal support would be \$7.00. The total reduction in a low-income consumers bill, including full state matching funds, would be \$10.50 per month. In the full discount scenario, for every \$3 a consumer sees in rate reduction, the state contributes only \$1 -- and all of these funds remain in-state.

In states that do not match FCC funds to lower monthly telephone rates, the FCC adopted eligibility criteria: participants in federal income means-tested programs such as Medicaid, food stamps, Supplemental Security Income (SSI), federal public housing assistance or Section 8, or Low Income Home Energy Assistance Program (LIHEAP) will be eligible for reductions in their phone bills of \$5.25 per month. States that contribute matching funds may set their own eligibility requirements as long as they are income-based.

a. Link-Up America: Supports Connectivity

Link-up America attempts to reduce the entry barrier for new low-income subscribers by paying half the cost of telephone installation and connection charges, up to \$30. Though the participants must again qualify under a state-determined means test, the state is not required to further contribute to reducing the hookup costs. A second part of the program

covers the interest charges for any deferred payment plan on installation and startup costs that the telephone company provides (within specified limits).

Link-Up customers are still responsible for security deposits and can only apply the discounts to a single residential telephone line. Link-Up participants must meet the qualifications determined by their state commission. In states that do not have a state program, consumers must participate in one of the following programs to qualify: Medicaid, Food Stamps, Supplemental Security Income, Federal Housing Assistance and Low Income Energy Assistance Program.

Low-income consumers may choose any qualified carrier using any technology to provide basic service. They will receive free toll blocking and toll limitation services and will not lose basic telephone service if they are unable to pay for toll charges. There is no restriction on the number of service connections per year for which a low-income consumer can receive Link-Up support.

The E-Rate: Schools, Libraries and Rural Health Care

a. Schools and Libraries

The Act added something new to the “traditional” understanding of universal service. Stepping beyond the established areas of support for rural infrastructure and low income households, it added support for schools (K-12), libraries and rural health care facilities.

However, it is important to note that this support is fundamentally different than the preceding models (Link-Up and Lifeline). Funding under this provision, commonly called the “E-rate” is directed entirely at supporting “Advanced Services”. The E-rate is not about telephone service -- it is about providing “affordable” access to the Internet and broadband digital services. In this regard, it sets an important precedent.

The Schools and Libraries Universal Service Program was established with the express purpose of providing affordable access to advanced telecommunications services for all eligible schools and libraries, particularly those in rural and inner-city areas.

Funded at up to \$2.25 billion annually, the Program provides discounts of 20% to 90% on telecommunications services, Internet access and internal connections. The level of discounts schools and libraries are eligible to receive depends on economic need and location, rural or urban; once approved, they apply their discounts to telecommunications services, Internet access and internal connections, then pay the difference out of their own budgets. The Program's deepest discounts go to rural and inner-city communities where the need for modern telecommunications services is most pressing. The discounts cover Internet access and many other telecommunications services, as well as equipment such as inside wiring, servers, and routers. Schools and libraries are required to apply for discounts for the telecommunications services they want to use.

E-rate funding comes from mandatory contributions to the Universal Service Fund by all telecommunications companies (local and long-distance carriers, reseller, cellular, paging, other wireless and any other companies that interconnect with the switched network, but not currently Internet, on-line service and cable telecommunications companies).

Schools and libraries may not resell any discounted services. The prohibition on resale, however, will not prohibit either computer lab fees for students or fees for Internet classes.

b. Rural Health Care Support

Congress took note of the potential importance and benefits of telemedicine in serving areas that otherwise may not be well served by the medical community. Again, this part of the Act sets some interesting precedents with respect to paying for high bandwidth, Internet access and instruction.

The Act says that telecommunications providers shall supply services to public and nonprofit health care providers that serve rural residents at rates reasonably comparable to rates charged in urban areas. This includes "services which are necessary for the provision of health care," as well as instruction related to those services.

The FCC's rules provide for all public and not-for-profit health care providers located in rural areas to receive universal service support, not to exceed an annual cap of \$400 million. A health care provider may obtain telecommunications service at a transmission capacity up to and including the bandwidth equivalent of a T-1 line at rates comparable to those paid for similar services in the nearest urban area within the state with more than 50,000 residents.

Rural health care providers may receive support for both distance-based charges and a toll-free connection to an Internet service provider. Each health care provider that lacks toll-free access to an Internet service provider may also receive the lesser of 30 hours of Internet access at local calling rates per month or \$180 per month in toll charge credits for toll charges imposed for connecting to the Internet.

Advanced Services and the Internet: Affordable Access for All

As noted above, the Act contemplates not only a new universal service regime of telephony, but expressly requires a migration to the provision of "advanced services". Section 254(b)(2) provides that: "Access to advanced telecommunications and information services should be provided in all regions of the Nation" and subsection (3) requires that "low-income consumers and those in rural, insular, and high cost areas" should have access to them.

APPENDIX IV:

**TITLE II OF S.2686: UNIVERSAL SERVICE REFORM; INTERCONNECTION
COMMUNICATIONS, CONSUMER'S CHOICE,
AND BROADBAND DEPLOYMENT ACT OF 2006**

(APPROVED SEN. COMMERCE COMMITTEE BY 15-7 VOTE, 6/28/06)

TITLE II--UNIVERSAL SERVICE REFORM; INTERCONNECTION

SEC. 201. SHORT TITLE.

This title may be cited as the 'Internet and Universal Service Act of 2006'.

I. Subtitle A--Contributions to Universal Service

SEC. 211. STABILIZATION OF UNIVERSAL SERVICE FUNDING.

**(a) ENSURING AN EQUITABLE CONTRIBUTION BASE FOR UNIVERSAL
SERVICE-**

(1) IN GENERAL- Section 254(d) (47 U.S.C. 254(d)) is amended to read
as follows:

`(d) Universal Service Support Contributions-

`(1) Contribution mechanism-

`(A) IN GENERAL- Each communications service provider shall
contribute as provided in this subsection to support universal
service.

`(B) REQUIREMENTS- The Commission shall ensure that the
contributions required by this subsection are--

**`(i) applied in a manner that is as competitively and
technologically neutral as possible; and**

**`(ii) specific, predictable, and sufficient to sustain the
funding of networks used to preserve and advance universal
service.**

`(C) ADJUSTMENTS- The Commission may adjust the contribution for providers for their low volume residential customers.

`(2) EXEMPTIONS- The Commission may exempt a communications service provider or any class of communications service providers from the requirements of this subsection--

`(A) if the services of such a provider are limited to such an extent that the level of its contributions would be de minimis; or

`(B) with respect to communications service provided pursuant to the Commission's Lifeline Assistance Program.

`(3) Contribution assessment flexibility-

`(A) METHODOLOGY- To achieve the principles in this section, the Commission may base universal service contributions upon--

`(i) revenue from communications service;

`(ii) working phone numbers or any other identifier protocol or connection to the networks; or

`(iii) network capacity.

`(B) USE OF MORE THAN 1 METHODOLOGY- If no single methodology employed under subparagraph (A) achieves the principles described in this subsection, the Commission may employ a combination of any such methodologies.

`(C) REMOVAL OF INTERSTATE/INTRASTATE DISTINCTION- For the purpose of universal service contributions, the Commission may assess the interstate, intrastate, or international portions of communications service.

`(D) GROUP PLAN DISCOUNT- If the Commission utilizes a methodology under subparagraph (A) based in whole or in part on working phone numbers, it may provide a discount for up to 3 additional phones provided under a group or family pricing plan.

`(E) PRESERVATION OF UNIVERSAL SERVICE FUNDS-

Nothing in this subsection precludes a State from establishing or maintaining State universal service pursuant to subsection (f).

`(4) NON-DISCRIMINATORY ELIGIBILITY REQUIREMENT- A

communications service provider is not exempted from the requirements of this subsection solely on the basis that such provider is not eligible to receive support under this section.

`(6) Billing-

`(A) IN GENERAL- A communications service provider that contributes to universal service under this section may place on any customer bill a separate line item charge that does not exceed the amount for the customer that the provider is required to contribute under this subsection that shall be identified as the 'Federal Universal Service Fee'.

`(B) LIMITATION- If such a provider bills customers for administrative costs associated with its collection and remission of universal service fees under this subsection--

`(i) the administrative costs shall be a separate line item charge on the bill and shall be identified as 'Optional Company Administrative Fee'; and

`(ii) the amount billed for such costs may not exceed the estimated direct costs attributable to such administrative costs.

`(7) DEFINITIONS- In this subsection:

`(A) BROADBAND SERVICE- The term 'broadband service' means any service used for transmission of information of a user's choosing with a transmission speed of at least 200 kilobits per second in at least 1 direction, regardless of the transmission medium or technology employed, that connects to the public Internet for a fee directly--

`(i) to the public; or

`(ii) to such classes of users as to be effectively available directly to the public.

`(B) COMMUNICATIONS SERVICE- The term `communications service' means telecommunications service, broadband service, or IP-enabled voice service (whether offered separately or as part of a bundle of services).

`(C) IP-ENABLED VOICE SERVICE- The term `IP-enabled voice service' means the provision of real-time 2-way voice communications offered to the public, or such classes of users as to be effectively available to the public, transmitted through customer premises equipment using TCP/IP protocol, or a successor protocol, for a fee (whether part of a bundle of services or separately) with 2-way interconnection capability such that the service can originate traffic to, and terminate traffic from, the public switched telephone network.'

(2) CONFORMING AMENDMENT- Section 254(b)(4) (47 U.S.C. 254(b)(4)) is amended by striking `telecommunications services' and inserting `communications services (as defined in subsection (d)(7)(B))'.

(b) Proper Accounting of Universal Service Contributions-

(1) FROM ALL BUDGETS- Notwithstanding any other provision of law, the receipts and disbursements of universal service under section 254 of the Communications Act of 1934 (47 U.S.C. 254) shall not be counted as new budget authority, outlays, receipts, or deficit or surplus for purposes of--

(A) the budget of the United States Government as submitted by the President;

(B) the Congressional budget;

(C) the Balanced Budget and Emergency Deficit Control Act of 1985; or

(D) any other statute requiring budget sequestrers.

(2) ADDITIONAL EXEMPTIONS- Section 1341, subchapter II of chapter 15, and sections 3302, 3321, 3322, and 3325 of title 31, United States Code, shall not apply to--

(A) the collection and receipt of universal service contributions, including the interest earned on such contributions; or

(B) disbursements or other obligations authorized by the Commission under section 254 of the Communications Act of 1934 (47 U.S.C. 254).

(c) FINANCIAL MANAGEMENT- The Federal Communications Commission and the Administrator of the Universal Service Fund--

(1) shall account for the financial transactions of the Fund in accordance with generally accepted accounting principles for Federal agencies;

(2) shall maintain the accounts of the Fund in accordance with the United States Government Standard General Ledger; and

(3) may invest unexpended balances only in Federal securities (as defined in section 113(b)(5) of Office of Management and Budget circular OMB A-11).

(d) RULEMAKING- Not later than 180 days after the date of enactment of this Act, the Federal Communications Commission shall issue a rule to implement section 254(d) of the Communications Act of 1934 (47 U.S.C. 254(d)) as amended by subsection (a).

SEC. 212. TELECOMMUNICATIONS SERVICES FOR LIBRARIES.

(a) IN GENERAL- Section 254(h)(4) (47 U.S.C. 254(h)(4)) is amended to read as follows:

“(4) CERTAIN USERS NOT ELIGIBLE- Notwithstanding any other provision of this subsection, the following entities are not entitled to preferential rates or treatment as required by this subsection:

“(A) An entity operated as a for-profit business.

“(B) A school described in paragraph (7)(A) with an endowment of more than \$50,000,000.

`(C) A library or library consortium not eligible for assistance under the Library Services and Technology Act (20 U.S.C. 9101 et seq.)--

`(i) from a State library administrative agency; or

`(ii) funded by a grant under section 261 of the Library Services and Technology Act (20 U.S.C. 9161) from an Indian tribe or other organization.'.

(b) FUNDING- Section 254(h)(1) (47 U.S.C. 254(h)(1)) is amended by adding at the end the following:

`(C) FUNDING- The obligations under, and administrative costs of, this subsection for any funding year may not exceed the sum of--

`(i) the annual program funding cap established by the Commission; and

`(ii) any unobligated balances from prior funding years.'.

(c) AMERICAN COMMUNITY SURVEY RESIDENTIAL INTERNET ACCESS QUESTION- The Secretary of Commerce, in consultation with the Federal Communications Commission, shall expand the American Community Survey conducted by the Bureau of the Census to elicit information for residential households, including those located on native lands, as to what technology such households use to access the Internet from home.

SEC. 213. MODIFICATION OF RURAL VIDEO SERVICE EXEMPTION.

(a) RURAL TELEPHONE COMPANIES- Section 251(f)(1) (47 U.S.C. 251(f)(1)) is amended--

(1) by striking `Subsection' in subparagraph (A) and inserting `Except as provided in subparagraph (B), subsection';

(2) by striking `interconnection, services, or network elements,' in subparagraph (A) and inserting `services or network elements,';

(3) by striking `(under subparagraph (B))' in subparagraph (A) and inserting `(under subparagraph (C))'

- (4) by redesignating subparagraphs (B) and (C) as subparagraphs (C) and (D);
 - (5) by inserting after subparagraph (A) the following:
 - `(B) INTERCONNECTION- Notwithstanding subparagraph (A), subsection (c)(2) of this section shall not apply to a rural telephone company until such company has received a bona fide request for interconnection.';
 - (6) by striking `exemption under subparagraph (A).' in subparagraph (C), as redesignated, and inserting `exemption.'; and
 - (7) by striking subparagraph (D) as redesignated.
- (b) OTHER RURAL CARRIERS- Section 251(f)(2) (47 U.S.C. 251(f)(2)) is amended by inserting `(other than subsection (c)(2))' after `subsection (b) or (c)'.

SEC. 214. INTERCONNECTION.

Title VII (47 U.S.C. 601 et seq.) is amended by adding after section 714 the following new section:

`SEC. 715. RIGHTS AND OBLIGATIONS OF IP-ENABLED VOICE SERVICE PROVIDERS.

- `(a) In General- An IP-enabled voice service provider shall have the same rights, duties, and obligations as a requesting telecommunications carrier under sections 251 and 252, if the provider elects to assert such rights.
- `(b) Disabled Services- An IP-enabled voice service provider shall have the same rights, duties, and obligations as a telecommunications carrier under sections 225, 255, and 710. In revising the Commission's regulations under such sections to carry out this subsection, the Commission shall consider whether a service or equipment is marketed as a substitute for telecommunications service, telecommunications equipment, customer premises equipment, or telecommunications relay services.
- `(c) IP-ENABLED VOICE SERVICE DEFINED- In this section, the term `IP-enabled voice service' means the provision of real-time 2-way voice

communications offered to the public, or such classes of users as to be effectively available to the public, transmitted through customer premises equipment using TCP/IP protocol, or a successor protocol, for a fee (whether part of a bundle of services or separately) with interconnection capability such that the service can originate traffic to, or terminate traffic from, the public switched telephone network.'

II. Subtitle B--Distributions From Universal Service

SEC. 251. BROADBAND REQUIREMENT.

Section 214(e) (47 U.S.C. 214(e)) is amended by adding at the end the following:

`(7) Broadband Service Requirement-

`(A) IN GENERAL- Notwithstanding paragraph (1), an eligible communications carrier may not receive universal service support under section 254 more than 60 months after the date of enactment of the Internet and Universal Service Act of 2006 if it has not deployed broadband service within its service area before the end of that 60-month period unless it receives a waiver under subparagraph (B).

`(B) WAIVERS-

`(i) APPLICATION- In order to receive a waiver under this subparagraph, an eligible communications carrier shall submit an application to the Commission.

`(ii) COST OF DEPLOYMENT- If an eligible communications carrier demonstrates to the satisfaction of the Commission that the cost per line of deploying such broadband service is at least 3 times the average cost per line of deploying such broadband service for all eligible communications carriers receiving universal service support, the Commission shall waive the application of subparagraph (A) to that eligible communications carrier.

`(iii) OTHER FACTORS- If an eligible communications carrier demonstrates to the satisfaction of the Commission that the deployment and provision of such broadband service is not technically feasible or would materially impair the carrier's ability to continue to provide local exchange service or broadband service throughout its service area, the Commission may waive the application of subparagraph (A) to that eligible communications carrier.

`(iv) DEEMED APPROVAL- If the Commission fails to act on a waiver request within 60 calendar days after it receives a completed application for the waiver, the waiver shall be deemed to be granted. If the Commission requests additional information from the eligible communications carrier, the 60-day period shall be tolled beginning on the date on which request is received by the carrier and ending on the date on which the Commission receives the information requested.

`(v) TERM; RENEWAL- A waiver under this subparagraph--

`(I) shall be for a period of not more than 2 years;
and

`(II) may be renewed, upon application, by the Commission if the applicant demonstrates that it is eligible for a waiver under clause (ii) or (iii).

`(C) NOTIFICATION OF STATE COMMISSION- Whenever the Commission grants a waiver to an eligible communications carrier under subparagraph (B) that has been designated under paragraph (2) by a State commission, the Commission shall notify the State commission of the waiver.

`(D) DEFINITIONS- In this paragraph:

`(i) BROADBAND SERVICE- The term `broadband service' means any service used for transmission of information of a user's choosing with a transmission speed of at least 3 megabits per second in at least 1 direction, regardless of the transmission medium or technology employed, that connects to the public Internet for a fee directly--

`(I) to the public; or

`(II) to such classes of users as to be effectively available directly to the public.

`(ii) ELIGIBLE COMMUNICATIONS CARRIER- The term `eligible communications carrier' means an entity designated under paragraph (2), (3), or (6). Any reference to `eligible telecommunications carrier' in this section is deemed also to refer to `eligible communications carrier'.

SEC. 252. ESTABLISHMENT OF BROADBAND ACCOUNT WITHIN UNIVERSAL SERVICE FUND.

Part I of title II (47 U.S.C. 201 et seq.) is amended by inserting after section 254 the following:

`SEC. 254A. BROADBAND FOR UNSERVED AREAS ACCOUNT.

`(a) Account Established-

`(1) IN GENERAL- There shall be, within the universal service fund established pursuant to section 254, a separate account to be known as the `Broadband for Unserved Areas Account'.

`(2) PURPOSE- The purpose of the Account is to provide financial assistance for the deployment of broadband service to unserved areas throughout the United States.

`(b) Implementation-

`(1) IN GENERAL- Within 180 days after the date of enactment of the Internet and Universal Service Act of 2006, the Commission shall issue rules establishing--

`(A) guidelines for determining which areas may be considered to be unserved areas for purposes of this section;

`(B) criteria for determining which facilities-based providers of broadband service, and which projects, are eligible for support from the Account;

`(C) procedural guidelines for awarding assistance from the Account on a merit-based and competitive basis;

`(D) guidelines for application procedures, accounting and reporting requirements, and other appropriate fiscal controls for assistance made available from the Account; and

`(E) a procedure for making funds in the Account available among the several States on an equitable basis.

`(2) SATELLITE SERVICE-

`(A) ELIGIBILITY OF PROVIDER- A satellite service provider shall be considered to be a facility-based provider eligible for support from the Account.

`(B) ELIGIBILITY OF CPE PROJECTS- The deployment of satellite customer premises equipment may be considered to be a project eligible for support from the Account.

`(C) DESIGNATION OF LIGHTLY SERVED AREAS- The availability of broadband service by satellite in an area shall not preclude the designation of that area as an unserved area if the Commission determines that subscribership to satellite service in the area is de minimis.

`(D) MULTIPLE AREAS WITHIN STATE- For purposes of this section, there may be more than 1 unserved area within a State.

`(3) REPORT- The Commission shall transmit an annual report to the Senate Committee on Commerce, Science, and Transportation and the

House of Representatives Committee on Energy and Commerce making recommendations for an increase or decrease, if necessary, in the amounts credited to the account under this section.

`(c) LIMITATIONS-

`(1) ANNUAL AMOUNT- Amounts obligated or expended under subsection (b) for any fiscal year may not exceed \$500,000,000.

`(2) USE OF FUNDS- To the extent that the full amount in the account is not obligated for financial assistance under this section within a fiscal year, any unobligated funds shall be used to support universal service under section 254.

`(3) SUPPORT LIMITED TO FACILITIES-BASED SINGLE PROVIDER PER UNSERVED AREA- Assistance under this section may be provided only to--

`(A) facilities-based providers of broadband service; and

`(B) 1 facility-based provider of broadband service in any unserved area.

`(d) Application With Sections 214, 254, and 410-

`(1) Section 214(e)- Section 214(e) shall not apply to the Broadband for Unserved Areas Account.

`(2) SECTION 254- Section 254 shall be applied to the Broadband for Unserved Areas Account--

`(A) by disregarding--

`(i) subsections (a) and (e) thereof; and

`(ii) any other provision thereof determined by the Commission to be inappropriate or inapplicable to implementation of this section; and

`(B) by reconciling, to the maximum extent feasible and in accordance with guidelines prescribed by the Commission, the implementation of this section with the provisions of subsections (h) and (l) thereof.

`(3) SECTION 410- Section 410 shall not apply to the Broadband for Unserved Areas Account.

`(e) Broadband Service Defined-

`(1) IN GENERAL- In this section, except to the extent revised by the Commission under paragraph (2), the term 'broadband service' means any service used for transmission of information of a user's choosing with a transmission speed of at least 500 kilobits per second in at least 1 direction, regardless of the transmission medium or technology employed, that connects to the public Internet for a fee directly--

`(A) to the public; or

`(B) to such classes of users as to be effectively available directly to the public.

`(2) ANNUAL REVIEW OF TRANSMISSION SPEED- The Commission shall review the transmission speed component of the definition in subparagraph (A) no less frequently than once each year and revise that component as appropriate.'

SEC. 253. ELIGIBILITY GUIDELINES.

Section 214(e) (47 U.S.C. 214(e)), as amended by section 251, is amended by adding at the end the following:

`(8) ELIGIBILITY GUIDELINES- A common carrier may not be designated as an eligible communications carrier (as defined in paragraph (7)(D)(ii)) subsection unless it--

`(A) provides a 5-year plan demonstrating how high-cost universal service support will be used to improve its coverage, service quality, or capacity in every wire center for which it seeks designation and expects to receive universal service;

`(B) demonstrates its ability to remain functional in emergency situations;

`(C) demonstrates that it will satisfy consumer protection and service quality standards;

`(D) offers local usage plans comparable to those offered by the incumbent local exchange carrier in the areas for which it seeks designation; and

`(E) acknowledges that it may be required to provide equal access if all other eligible telecommunications carriers in the designated service area relinquish their designations pursuant to paragraph (4) of this subsection.'.

SEC. 254. PRIMARY LINE.

Section 214(e) (47 U.S.C. 214(e)), as amended by section 253, is amended by adding at the end the following:

`(9) PRIMARY LINE- In implementing the requirements of this Act with respect to the distribution and use of Federal universal service support the Commission shall not limit such distribution and use to a single connection or primary line, and all residential and business lines served by an eligible telecommunications carrier shall be eligible for Federal universal service support.'.

APPENDIX V